WHAT IS CLAIMED IS:

1. A process of manufacturing a semiconductor package substrate having bonding pads with a plated metal layer thereon, comprising:

providing a substrate having a plurality of bonding pads on at least one surface thereof, and forming a conductive film over the surface of the substrate;

forming a photoresist layer over the conductive film, wherein the photoresist layer has a plurality of first openings for exposing predetermined portions of the conductive film corresponding in position to the bonding pads;

removing the exposed portions of the conductive film, so as to expose the bonding pads respectively via the first openings;

performing a plating process to form a plated metal layer on the exposed bonding pads respectively; and

removing the photoresist layer and the remainder of the conductive film covered by the photoresist layer.

2. The process of claim 1, further comprising:

forming a solder mask on the surface of the substrate, wherein the solder mask has a plurality of second openings for exposing the plated metal layer on the bonding pads respectively.

3. The process of claim 1, wherein the substrate is a flip-chip type package substrate or a wire-bonding type package substrate.

4. The process of claim 1, wherein the bonding pads are selected from the group consisting of wire-bonding pads, bump pads, presolder pads, and ball pads.

5. The process of claim 1, wherein the metal layer is made of a material selected from the group consisting of gold, nickel, palladium, silver, tin, nickel/palladium, chromium/titanium, nickel/gold, palladium/gold, and nickel/palladium/gold.

6. The process of claim 1, wherein the conductive film is made of a material selected from the group consisting of copper, tin, nickel, chromium, titanium, copper-chromium alloy, and tin-lead alloy.

7. The process of claim 1, wherein the conductive film is formed by a technique selected from the group consisting of sputtering, electroless plating, physical vapor deposition, and chemical vapor deposition.

8. A process of manufacturing a semiconductor package substrate having bonding pads with a plated metal layer thereon, comprising:

providing a substrate having a plurality of bonding pads on at least one surface thereof, and forming a conductive film over the surface of the substrate;

forming a photoresist layer over the conductive film, wherein the photoresist layer has a plurality of first openings corresponding in position to the bonding pads, and an extension portion extending from an inner wall of each of the first openings to partly cover a portion of the conductive film exposed via the corresponding first opening;

removing the part of the conductive film not covered by the photoresist layer, so as to expose the bonding pads respectively via the first openings;

performing a plating process to form a plated metal layer on the exposed bonding pads respectively; and

removing the photoresist layer and the remainder of the conductive film covered by the photoresist layer.

9. The process of claim 8, further comprising:

forming a solder mask on the surface of the substrate, wherein the solder mask has a plurality of second openings for exposing the plated metal layer on the bonding pads respectively.

10. The process of claim 8, wherein the substrate is a flip-chip type package substrate or a wire-bonding type package substrate..

11. The process of claim 8, wherein the bonding pads are selected from the group consisting of wire-bonding pads, bump pads, presolder pads, and ball pads.

12. The process of claim 8, wherein the metal layer is made of a material selected from the group consisting of gold, nickel, palladium, silver, tin, nickel/palladium, chromium/titanium, nickel/gold, palladium/gold, and nickel/palladium/gold.

13. The process of claim 8, wherein the conductive film is made of a material selected from the group consisting of copper, tin, nickel, chromium, titanium, copper-chromium alloy, and tin-lead alloy.

14. The process of claim 8, wherein the conductive film is formed by a technique selected from the group consisting of sputtering, electroless plating, physical vapor deposition, and chemical vapor deposition.

15. A semiconductor package substrate, comprising:

a plurality of bonding pads formed on at least one surface of the substrate;

a plated metal layer deposited on the bonding pads respectively; and

a solder mask formed over the surface of the substrate, wherein the solder mask has a plurality of openings for exposing the plated metal layer on the bonding pads respectively; wherein the bonding pads are free of electrical connection with a plating wire.

16. The semiconductor package substrate of claim 15, wherein the bonding pads are selected from the group consisting of wire-bonding pads, bump pads, presolder pads, and ball pads.

17. The semiconductor package substrate of claim 15, wherein the metal layer is made of a material selected from the group consisting of gold, nickel, palladium, silver, tin, nickel/palladium, chromium/titanium, nickel/gold, palladium/gold, and nickel/palladium/gold.